

REMARKS

INTRODUCTION:

In accordance with the foregoing, claims 1 and 12 have been amended. No new matter is being presented, and approval and entry are respectfully requested.

Claims 1-5, 8-10, and 12 are pending and under consideration. Reconsideration is requested.

REJECTION UNDER 35 U.S.C. §§102 and 103:

In the Office Action, at page 2, item 2, the Examiner rejected claims 1-5 and 12 under 35 U.S.C. §102(b) as being anticipated by Otto (US 4,770,548 – hereinafter Otto '548). The reasons for the rejection are set forth in the Office Action and therefore not repeated. Applicants traverse this rejection and respectfully request reconsideration.

In the Office Action, at page 2, item 3, the Examiner rejected claims 1-5 and 12 under 35 U.S.C. §102(b) as being anticipated by Otto (US 5,129,744 – hereinafter Otto '744). The reasons for the rejection are set forth in the Office Action and therefore not repeated. Applicants traverse this rejection and respectfully request reconsideration.

In the Office Action, at page 3, item 5, the Examiner rejected claims 1-5, 8, 10 and 12 under 35 U.S.C. §103(a) as being unpatentable over Applicants' Admitted Prior Art (APA) in view of Otto '548. The reasons for the rejection are set forth in the Office Action and therefore not repeated. Applicants traverse this rejection and respectfully request reconsideration.

In the Office Action, at page 4, item 6, the Examiner rejected claims 1-5, 8, 9 and 12 under 35 U.S.C. §103(a) as being unpatentable over Nagase (6,168,315 – hereinafter Nagase) in view of Otto '548. The reasons for the rejection are set forth in the Office Action and therefore not repeated. Applicants traverse this rejection and respectfully request reconsideration.

Amended, independent claim 1 recites: "...said sealing member having an approximately constant annular cross section...."

And amended, independent claim 12 recites: "...the sealing member having an approximately constant annular cross section...."

Otto '548 discloses a wheel bearing assembly with a seal B. The seal B has an elastomeric sealing element 26 that has a primary lip 34 and a secondary lip 36. There is a clearance c between a cylindrical face 38 of the primary lip 34 and a cylindrical sealing surface

14 of a cone 8. (See Otto, at FIG. 2, and col. 4, lines 9-39). Additionally, in Otto '548, cylindrical face 38 is not continuous. Instead, cylindrical face 38 is interrupted by cavities 44 configured to pump lubricant that enters the cavities 44 back toward rollers. (See Otto '548, at FIG. 3, and col. 4, lines 46-50).

Otto '744 discloses a labyrinth lip 76 with pumping cavities, whose operation is the same as that described in Otto '548. (See Otto '744, at FIG. 5, and col. 5, lines 27-46).

Applicants respectfully submit that neither Otto '548 nor Otto '744, either alone or in combination, disclose or suggest that primary lip 34 nor labyrinth lip 76 have an approximately constant annular cross section.

Applicants respectfully submit that, as disclosed in a non-limiting embodiment in the subject application, gaps defined between free ends of non-contact sealing lips 10a and 12a and sealing surfaces 2c and 15aa, respectively, are of a tapered shape. (See Specification, at FIGS. 2B and 3B, page 12, line 19 to page 13, line 7, and page 14, line 8 to page 15, line 11). Such tapered-shaped gaps are effective in purging air inside the annular working space to the outside, especially when the air is thermally expanded due to heat evolved during the operation of the wheel support bearing assembly. Additionally, such tapered-shaped gaps are effective in controlling a gap dimension with little variation, as compared to gaps with a labyrinth seal structure, such as those disclosed in Otto '548 and Otto '744. The reason for such effective gap dimension control, as can be seen in FIG. 2B of the subject Specification, is that the gap between the free end face 10aa of the sealing lip 10a and the sealing surface area 2c has a mean dimension that is larger than the gap $\delta 1$. Accordingly, deviation of the gap dimension $\delta 1$ does not largely effect deviation of such a mean dimension.

And since neither APA nor Nagase disclose or suggest even a non-contact sealing lip, Applicants respectfully submit that none of APA, Nagase, or Otto '548, either alone or in combination, disclose or suggest every element of independent claims 1 and 12, arranged as required, respectively, by claims 1 and 12.

Accordingly, Applicants respectfully submit that independent claims 1 and 12 patentably distinguish over the cited art, and should be allowable for at least the above-mentioned reasons. Further, Applicants respectfully submit that claims 2-5, and 8-10, which ultimately depend from independent claim 1, should be allowable for at least the same reasons as claim 1, as well as for the additional features recited therein.

CONCLUSION:

In accordance with the foregoing, Applicants respectfully submit that all outstanding objections and rejections have been overcome and/or rendered moot, and further, that all pending claims patentably distinguish over the cited art. Thus, there being no further outstanding objections or rejections, the application is submitted as being in condition for allowance which action is earnestly solicited.

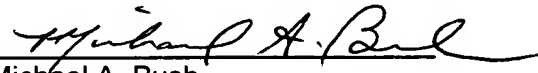
If the Examiner has any remaining issues to be addressed, it is believed that prosecution can be expedited and possibly concluded by the Examiner contacting the undersigned attorney for a telephone interview to discuss any such remaining issues.

If there are any underpayments or overpayments of fees associated with the filing of this Amendment, please charge and/or credit the same to our Deposit Account No. 19-3935.

Respectfully submitted,

STAAS & HALSEY LLP

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By: 
Michael A. Bush
Registration No. 48,893

1201 New York Avenue, NW, 7th Floor
Washington, D.C. 20005
Telephone: (202) 434-1500
Facsimile: (202) 434-1501